



State of Utah
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

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August 18, 2003

Mr. Dale Snyder
Absolute Mining and Minerals, Inc.
135 South 1350 East
Lehi, Utah 84043

Re: Russian Knapweed Control, Absolute Mining and Minerals, Inc., Dolores River Placer Project,
S/019/035, Grand County, Utah

Dear Mr. Snyder:

In the report for the inspection I performed on May 29, 2003, at the AMMI Mine site, I indicated it was too late to begin control efforts this year and that it would be best to begin a spraying operation in the fall (if there is rain) or early next year. This statement was in error. The best control is obtained by applying Tordon, Curtail, or Transline between the onset of flowering and frost.

Enclosed are copies of pages from the 2001-2002 Weed Management Handbook published by the Cooperative Extension Services of Utah State University, Montana State University, and the University of Wyoming. These pages show recommended herbicides and application rates and times. One page also shows the relative effectiveness of different herbicides.

Russian knapweed is difficult to control, and it will probably take three to five years of persistent effort before it can be eradicated. Even then, it will be necessary to watch for it coming back. I encourage you to begin control efforts as soon as possible.

Please call me at 801-538-5261 if you have any questions about this information.

Sincerely,

Paul B. Baker
Senior Reclamation Biologist

jb

Enclosure: Page from the Weed Management Handbook

cc: Denice Swanke, Moab BLM with enclosure

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PROBLEM WEEDS, POISONOUS PLANTS- continued

Herbicide	Application and Remarks	
Redeem R&P (3EC) <i>clopyralid + triclopyr</i>	Rate:	1 to 2 qt product/A
	Time:	Apply to actively growing weeds.
	Remarks:	Will control only broadleaf weeds and brush that are actively growing at the time of application.
	Caution:	Do not spray surface water. Do not spray or allow drift to move from target plants to trees and brush growing on the site of application.
knapweed, Russian (<i>Centaurea repens</i>)		
Roundup (3SC) <i>glyphosate</i>	Rate:	1 gal product/A.
	Time:	Apply to actively growing knapweed when most plants are at the late bud to early flower stage of growth, usually late summer or fall.
	Remarks:	This treatment is usually effective in eliminating most of the Russian knapweed. Respraying will be necessary the second year to control a few plants that were not killed by the first spraying.
	Caution:	Glyphosate is a nonselective herbicide.
Tordon 22K (2EC) <i>picloram</i>	Rate:	1 pt to 2 qt product/A.
	Time:	Apply when plants are in the early flower stage up to the time of the first killing frost.
	Remarks:	Competition from crops or grasses following treatments is important to maintain long-term control. Best results are obtained with lowest rates when applied following a killing frost.
	Caution:	A RESTRICTED USE HERBICIDE. Do not contaminate water. Potatoes, beans, and many other broadleaf crops are sensitive to soil residues of Tordon. Do not use in diversified cropping areas.
Curtail (2.38ED) or Transline (3EC) <i>clopyralid</i> + 2,4-D amine	Rate:	2 to 4 pt/A of Curtail, or 2/3 to 1 1/3 pt Transline/A in rangeland, pastures, and non-cropland.
	Time:	Apply from full bloom up to killing frost. Lowest rates work best when applied following a killing frost.
	Remarks:	Lower rate for in-crop cereal grain application will usually provide only suppression. Higher rates for fallow, post-harvest, and CRP applications. Consult label for specific directions. With CRP applications, for established grass only. Apply in enough total spray volume to ensure good coverage.
	Caution:	Do not rotate to any crop other than wheat, barley, oats, or grass for 1 year after treatment. Do not apply by air when an air temperature inversion exists.

PROBLEM WEEDS, POISONOUS PLANTS- continued

Herbicide	Application and Remarks	
Telar (75DF) <i>chlorsulfuron</i>	Rate:	1.5 oz product/A.
	Time:	Prebloom to bloom and fall rosette.
	Remarks:	Maintain constant agitation while mixing in spray solution. Add 0.25% v/v nonionic surfactant to the spray mixture. Apply with ground equipment in a minimum 10-gal/A carrier. Rate selection is based on soil texture and plant growth stage.
	Caution:	Clean sprayer with chlorine bleach solution after applying chlorsulfuron. Do not use near sensitive crops. Do not use on soils with pH ranges above 7.5; extended soil residues can harm future crops. Telar is labeled for non-cropland use only.
larkspur, geyer (<i>Delphinium geyeri</i>)		
Escort (60DF) <i>metsulfuron</i>	Rate:	1.5 oz product/A.
	Time:	Apply in early spring after all larkspur plants are in the rosette stage.
	Remarks:	Plants should be rapidly growing at the time of application. For use on range or pasture land.
	Caution:	Use all mixtures with Escort within 24 hours. Use with a nonionic surfactant.
Tordon 22K (2EC) <i>picloram</i>	Rate:	1.5 to 2 pt product/A.
	Time:	Apply from rosette to flower bud formation.
	Remarks:	Plants should be growing rapidly at the time of application.
	Caution:	A RESTRICTED USE HERBICIDE. Do not contaminate water. Do not graze within 2 weeks after application.
larkspur, tall, or duncecap (<i>Delphinium occidentale</i>)		
Escort (60DF) <i>metsulfuron</i>	Rate:	1.5 oz product/A.
	Time:	Tall larkspur should be sprayed before the 6 to 8 leaf stage in early spring, plants should be less than 8 inches in height.
	Remarks:	Treatments have been very effective only if they are applied in early spring, shortly after snow drifts are melted. When applications are at the bloom stage add 1 qt Tordon to spray mixture.
	Caution:	A nonionic surfactant (1 qt per 100 gal of spray solution) must be added to spray mixture. The spray should be agitated during mixing and spraying.
Tordon 22K (2EC) <i>picloram</i>	Rate:	2 to 3 qt product/A.
	Time:	Apply Tordon 22K from the time of flower stalk formation to early seed development.
	Remarks:	Plants should be actively growing in the bud or bloom stage at the time of treatment. When applications are made in early spring add Escort at 1 oz/A.
	Caution:	A RESTRICTED USE HERBICIDE. Do not contaminate water. Do not graze for 2 weeks after application.

WEED RESPONSE TO PASTURE AND RANGELAND HERBICIDES

Weeds	Clarity	Gramoxone	Escort	Remedy	Roundup Ultra	Spike 20P	Transline	Curtail	Tordon 22 K	Tordon 22K + 2,4-D	2,4-D	Velpar L	Plateau
Grasses													
downy brome	-	E	-	-	E	-	-	-	-	-	-	E	-
quackgrass	-	-	-	-	G-E	-	-	-	-	-	-	G-E	-
perennial grasses	-	-	-	-	G-E	-	-	-	-	-	-	G-E	-
foxtail barley	-	G	-	-	G	-	-	-	-	-	-	E	-
bulbous bluegrass	-	P	-	-	G	-	-	-	-	-	-	E	-
Broadleaf Annuals													
bedstraw	G	-	G	-	-	-	-	-	-	-	P	-	-
kochia	G	G	-	-	E	-	-	G	P	-	G	-	-
Russian thistle	G	G	-	-	E	-	-	G	F	-	G	G	-
Biennials													
burdock	-	-	E	G	-	-	-	F	-	-	F	-	-
houndstongue	G	-	E	-	-	-	-	P	G	-	F	-	-
mullein, common	-	-	E	-	G	-	-	-	F	G	F	-	-
musk thistle	F	-	E	-	-	-	G-E	G-E	E	E	F	-	-
plumeless thistle	E	-	G-E	-	-	-	E	E	E	E	G	-	-
scotch thistle	F	-	E	-	-	-	E	G	E	E	F	-	-
yellow starthistle	G-E	-	P	-	-	-	E	E	E	E	F	-	-
Perennials													
field bindweed	F	P	F	-	F	-	-	P	G	G	F	-	-
sulfur cinquefoil	P	-	E	G	-	-	-	P	E	E	G	-	-
common crupina	G	-	E	-	G	-	-	F	E	E	G	-	-
dandelion	G	P	E	G	G	-	G	G	G	G	F	G	-
dyer's woad	F	-	E	-	-	-	-	-	P	-	G	-	-
curlycup gumweed	G	-	G	-	-	-	-	E	E	E	G	-	-
orange hawkweed	G	-	P	-	-	-	G	G	E	E	-	-	-
yellow hawkweed	P	-	P	-	-	-	G	G	E	E	F	-	-
horsetail	-	-	P	-	-	-	-	-	-	-	-	G	-
diffuse knapweed	F-G	-	P	-	F	-	G-E	G-E	E	E	F	-	-
Russian knapweed	F	-	F	-	P	-	G	G	E	E	P	-	-
spotted knapweed	G	-	P	-	F	-	E	E	E	E	G	F	-
larkspurs	P	-	E	-	G	-	-	-	E	E	F	-	-
locoweeds	E	-	E	-	-	-	G	E	E	E	G	-	-
purple loosestrife	-	-	G	G	G	-	-	-	-	-	G	-	-
lupine	P	-	F-G	-	-	-	-	P	P	F	G	-	-
plantain spp.	F	-	G	-	-	-	-	-	G	-	G	-	-
pricklypear cactus	-	-	P	-	-	-	-	-	E	E	P	-	-
rush skeletonweed	F	-	P-F	-	P	-	-	G	E	E	F	-	-
common tansy	F	-	E	-	-	-	-	F	G	G	P	-	-
Canada thistle	F	-	F	F	G	-	E	E	E	E	-	-	-
dalmatian toadflax	P	-	F-G	-	-	-	-	-	E-G	E-G	-	-	G
yellow toadflax	-	-	F	-	G	-	-	P	G	G	-	-	-
leafy spurge	F	-	P	-	G	-	-	P	G	G	F	-	G
hoary cress (whitetop)	-	-	E	-	F	-	-	-	P	-	F	-	-